PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE RECONSTRUCTION OF AN EXISTNG TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 355 (MARKET STREET) AND MONOCACY BOULEVARD/NEW DESIGN ROAD AND THE INSTALLATION OF TWO NEW TRAFFIC CONTROL SIGNALS AND STREET LIGHTING AT THE INTERSECTIONS OF SOUTH STREET AND MONOCACY BOULEVARD AND MD 85 AND I-70 RAMPS IN FREDERICK COUNTY. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION. MD 85 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

1. MD355 AND MONOCACY BOULVEVARD/NEW DESIGN ROAD

   STAGE 1 - 4b

   THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 355 APPROACHES OPERATING CONCURRENTLY AND THE MONOCACY BLVD./NEW DESIGN ROAD APPROACHES OPERATING SPLIT.

   EXCLUSIVE LEFT-TURN PHASING IS PROVIDED FOR NORTHBOUND AND SOUTHBOUND MD 355 APPROACHES.

   EMERGENCY PRE-EMPTION IS PROVIDED FOR THE SOUTHBOUND MD 355 APPROACH.

   STAGE 5a - ULTIMATE

   THE INTERSECTION WILL OPERATE IN A NEMA EIGHT-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 355 APPROACHES OPERATING CONCURRENTLY AND THE MONOCACY BLVD./NEW DESIGN ROAD APPROACHES OPERATING CONCURRENTLY.

   EXCLUSIVE LEFT-TURN PHASING IS PROVIDED FOR NORTHBOUND AND SOUTHBOUND MD 355 APPROACHES.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR THE MONOCACY BLVD./NEW DESIGN ROAD APPROACHES.

   EMERGENCY PRE-EMPTION IS PROVIDED FOR THE SOUTHBOUND MD 355 APPROACH.

2. SOUTH STREET AND MONOCACY BOULEVARD

   THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE SOUTH STREET APPROACHES OPERATING CONCURRENTLY AND THE MONOCACY BLVD. ROAD APPROACH OPERATING CONCURRENTLY.

   EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING IS PROVIDED FOR THE SOUTH STREET APPROACHES.

   EMERGENCY TRAIN PRE-EMPTION IS PROVIDED FOR THE NORTHBOUND AND SOUTHBOUND SOUTH ST. APPROACHES.

3. MD 85 AND I-70 RAMPS

   THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 85 APPROACHES OPERATING CONCURRENTLY AND THE I-70 RAMP APPROACHES OPERATING CONCURRENTLY.

   EXCLUSIVE LEFT-TURN PHASING IS PROVIDED FOR NORTHBOUND AND SOUTHBOUND MD 85 APPROACHES.

CONTROLLER REQUIREMENTS

1. MD 355 AND MONOCACY BOULEVARD/NEW DESIGN ROAD

   INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH SYSTEM PACKAGE AND TWO (2), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

2. SOUTH STREET AND MONOCACY BOULEVARD

   INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER WITH SYSTEM PACKAGE AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

3. MD 85 AND I-70 RAMPS

   INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER WITH SYSTEM PACKAGE AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

PHONE DROP

UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION AT EACH INTERSECTION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8140/8141

MR. DAVE COYNE
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 624-8105/8106

MR. JAMES BUCKALEW
DISTRICT UTILITY ENGINEER
PHONE: (301) 624-8115/8116

MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9016	4 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP DETECTOR AMPLIFIER
9044	3 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SYSTEM PACKAGE HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9086	3 EACH	VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS
9571	509 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
	- 4 EACH	R10-12 SIGN (36 IN. x 42 IN.) - MAST ARM MOUNT
	- 3 EACH	D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - SPAN MOUNT
	- 8 EACH	D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT
	- 4 EACH	R3-5L SIGN (30 IN. x 36 IN.) - SPAN MOUNT
	- 8 EACH	R3-5L SIGN (30 IN. x 36 IN.) - MAST ARM MOUNT
	- 2 EACH	R3-5R SIGN (30 IN. x 36 IN.) - MAST ARM MOUNT
	- 2 EACH	R3-1 SIGN (30 IN. x 30 IN.) - MAST ARM MOUNT
	- 2 EACH	R5-1 SIGN (30 IN. x 30 IN.) - POLE MOUNT
	- 1 EACH	R10-6 SIGN (24 IN. x 30 IN.) - MAST ARM MOUNT
	- 1 EACH	R10-11a SIGN (24 IN. x 30 IN.) - MAST ARM MOUNT
	- 2 EACH	W3-3 SIGN (36 IN. x 36 IN.) WITH "NEW" PANEL (24 IN. x 24 IN.) AND FLAG - GROUND MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 355, RIGHT ARROW" (30 IN. x 51 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 355, LEFT ARROW" (48 IN. x 75 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 355, RIGHT ARROW" (30 IN. x 51 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 355, LEFT ARROW" (48 IN. x 75 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "NORTH, MD 85, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT
	- 1 EACH	ASSOCIATED SHIELD ASSEMBLY "SOUTH, MD 85, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT
	- 1 EACH	C-1 SIGN (84 IN. x 48 IN.) - MAST ARM MOUNT
	- 1 EACH	C-2 SIGN (84 IN. x 48 IN.) - MAST ARM MOUNT

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET AT MD 355 AND MD 914 (NEW DESIGN ROAD)/MONOCACY BLVD. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
120500	LUMP SUM	MAINTENANCE OF TRAFFIC
114245	500 L.F.	24 INCH WHITE REMOVABLE PREFORMED PAVEMENT LINE MARKING
203030	15 C.Y.	TEST PIT EXCAVATION
585620	1600 L.F.	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
585624	525 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
800000	2 EACH	15 FT. MAST ARM
800000	2 EACH	BLANKOUT SIGN
800000	16 EACH	RELOCATE EXISTING OVERHEAD SIGNS
800000	LUMP SUM	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT
800000	2 EACH	CONTROL CABLE, 900 FT., VIDEO DETECTION CAMERA TO CONTROLLER
801004	61 C.Y.	CONCRETE FOR SIGNAL FOUNDATION
801106	36 L.F.	WOOD SIGN SUPPORTS 4 INCH x 6 INCH
802501	1870 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805115	60 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED
805118	800 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED
805125	400 L.F.	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805135	3200 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805140	800 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805160	200 L.F.	1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
810010	255 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG-THHN/THWN
810550	6 EACH	MICROLOOP PROBE, 500 FOOT LEAD IN CABLE
810555	6 EACH	MICROLOOP PROBE, 1000 FOOT LEAD IN CABLE
811001	41 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813014	33 S.F.	INSTALL GROUND MOUNTED SIGN
813015	476 S.F.	INSTALL OVERHEAD SIGN
816001	12 EACH	VIDEO DETECTION CAMERA
816005	9 EACH	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
816010	5 EACH	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
816201	1 EACH	DISCRIMINATOR MODULE, 4 CHANNEL, NO. 764
816215	1 EACH	OPTICOM NO. 721 DETECTOR EYE
818030	2 EACH	STEEL POLE WITH A 38 FOOT MAST ARM
818036	3 EACH	STEEL POLE WITH A SINGLE 50 FOOT MAST ARM
818041	3 EACH	STEEL POLE WITH A SINGLE 60 FOOT MAST ARM
818051	1 EACH	STEEL POLE WITH TWIN 50 FOOT AND 70 FOOT MAST ARMS
818052	2 EACH	STEEL POLE WITH SINGLE 70 FOOT MAST ARM
822002	1400 L.F.	12-PAIR COMMUNICATION CABLE, JELLYFILLED (UNDERGROUND)
831010	11 EACH	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
837001	18 EACH	GROUND ROD - $^{3}/_{4}$ INCH DIAMETER x 10 FOOT LENGTH
860265	27 EACH	RELOCATE EXISTING SIGNAL HEAD
860270	18 EACH	8 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860272	163 EACH	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860288	700 L.F.	ELECTRICAL CABLE - 4 CONDUCTOR OPTICOM CABLE
861104	2500 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
861107	7570 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	6900 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
861116	3400 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)
862101	400 L.F.	LOOPWIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
862102	600 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
866103	11 EACH	15 FT. LIGHTING ARM ON SIGNAL STRUCTURE
867105	2 EACH	12 IN. x 32 FOOT STRAIN POLE
869101	200 L.F.	STEEL SPAN WIRE - $^{1}/_{4}$ INCH DIAMETER
869102	200 L.F.	STEEL SPAN WIRE - $^{3}/_{8}$ INCH DIAMETER
871202	3 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT

TSP-19

WR&A
Whitman, Requardt and Associates, LLP
801 South Caroline Street
Baltimore, Maryland 21231
(410) 235-3450

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

GENERAL INFORMATION SHEET
MD 355 SIGNALS

DRAWN BY: S.BLOSS	F.A.P. NO.		TS NO.		
CHECKED BY: N. LEARY	S.H.A. NO.	FR4265I72		SHEET NO.	
SCALE: NONE	COUNTY:	FREDERICK	T.I.M.S. NO. G813		OF
DATE: 4/20/2005	LOG MILE:				

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